WHAT IS CLAIMED IS:

1. A method for communicating accumulated state information between tasks in a learning system, comprising:

encoding initial state representation for a hypothetical learning task indicating that no training instances have been received;

receiving a training instance;

if the training instance received reflects a new learning task, initializing a new learning task state representation based on the hypothetical learning task state representation;

updating each learning task state representation except the hypothetical learning task using a target value stored for that task in the training instance; and

updating the state representation for the hypothetical learning task using a default target value for the training instance.

2. The method of claim 1, further including producing predictors for each learning task based on each learning task state representation.

3. The method of claim 1, wherein default target values reflect negative examples.

4. The method of claim 2, further including an applier that produces a prediction based on the predictor.

5. The method of claim 2 wherein the predictors are at least one of boolean functions, regression models and neural networks.

6. The method of claim 2 where the predictors are used by another learning system.

7. The method of claim 1 where the learning system is an incremental supervised learning system.

8. A system for communicating accumulated state information between tasks in a learning system, comprising:

an incremental learner that receives training instances;

a hypothetical learning task state representation storage that is initialized to indicate no training instance have been received and that is updated with the default target value for each new training instance;

a state representation storage that stores an initialized new learning task state representation based on the hypothetical learning task state representation and that stores updated state representation for each learning task based on the target value for the received training instance and that updates the hypothetical learning task with a default target value for each received training instance.

9. The system of claim 8, further comprising a predictor storage which encodes a predictor based on each learning task state representation. .

10. The system of claim 8, wherein the default target values reflect negative examples.

11. The system of claim 9, further comprising an applier that produces a prediction based on the predictor.

12. The system of claim 9 wherein the predictor storage encodes at least one of boolean functions, regression models and neural networks.

13. The system of claim 9 wherein the predictor storage is used by another learning system.

14. The system of claim 8 where the learning system is an incremental supervised learning system.